

1003300-000914
SEQUENCE LISTING

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Baltzer, Lars
Mattsbj Baltzer, Inger
Dolphin, Gunnar T.

<120> Peptides Based on the Sequence of Human Lactoferrin
and Their Use

<130> 003300 723

<140> US 09/743,107
<141> 2001 08 21

<150> PCT/SE99/01230
<151> 2000 09 29

<150> SE 9802441 7
<151> 1998 07 06

<150> SE 9802562 0
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<150> SE 9804614 7
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<160> 102

<170> PatentIn version 2.1

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<223> Amino acid 1 is Xaa wherein Xaa = Glu or no amino acid.

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<222> (2)
<223> Amino acid 2 is Xaa wherein Xaa = Ala or no amino acid.

<220>
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<223> Amino acid 5 is Xaa wherein Xaa = Cys or Ala.

<220>
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<223> Amino acid 7 is Xaa wherein Xaa = Gln or Lys.

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<220>
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<222> (11)
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<223> Amino acids 17 25 are Xaa wherein Xaa = Gly, Pro, Pro, Val, Ser, Cys, Ile, Lys, Arg

<220>
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<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to modification of the sequence consisting of aa 16 40 in human lactoferrin

<400> 1

Xaa Xaa Thr Lys Xaa Phe Xaa Trp Gln Arg Xaa Met Arg Lys Val Arg
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25

<210> 2
<211> 25
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<400> 2

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

Gly Pro Pro Val Ser Cys Ile Lys Arg
20 25

<210> 3
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of the sequence consisting of amino acids 16 40 in
human lactoferrin

<400> 3
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15
Gly Pro Pro Val Ser Cys Ile Lys Arg
20 25

<210> 4
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of the sequence consisting of amino acids 18 40 in
human lactoferrin

<400> 4
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg Gly Pro
1 5 10 15
Pro Val Ser Cys Ile Lys Arg
20

<210> 5
<211> 23

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<212> PRT
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of the sequence consisting of amino acids 18 40 in
human lactoferrin

<400> 5
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg Gly Pro
1 5 10 15
Pro Val Ser Cys Ile Lys Arg
20

<210> 6
<211> 14
<212> PRT
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<222> (14)
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<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to a modification
of the sequence consisting of amino acids 18 31 in
human lactoferrin

<400> 6
Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg
1 5 10

<210> 7
<211> 14
<212> PRT

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<220>

<221> BINDING

<222> (5)..(9)

<223> LACTAM

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<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of aa 18 31 in human lactoferrin; a lactam is formed between aa 5 and 9

<400> 7

Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg
1 5 10

<210> 8

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 12 31 of the protein human lactoferrin

<400> 8

Val Ser Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met
1 5 10 15

Arg Lys Val Arg
20

<210> 9

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 12 18 of the protein human lactoferrin

<400> 9

Val Ser Gln Pro Glu Ala Thr
1 5

<210> 10
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 13 19 of the protein human lactoferrin

<400> 10
 Ser Gln Pro Glu Ala Thr Lys
 1 5

<210> 11
 <211> 7
 <212> PRT
 <213> Artificial Sequence

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 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 14 20 of the protein human lactoferrin

<400> 11
 Gln Pro Glu Ala Thr Lys Cys
 1 5

<210> 12
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 15 21 of the protein human lactoferrin

<400> 12
 Pro Glu Ala Thr Lys Cys Phe
 1 5

<210> 13
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 22 of the protein human lactoferrin

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amino acids in positions 16 22 of the protein
human lactoferrin

<400> 13
Glu Ala Thr Lys Cys Phe Gln
1 5

<210> 14
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 17 23 of the protein
human lactoferrin

<400> 14
Ala Thr Lys Cys Phe Gln Trp
1 5

<210> 15
<211> 7
<212> PRT
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 18 24 of the protein
human lactoferrin

<400> 15
Thr Lys Cys Phe Gln Trp Gln
1 5

<210> 16
<211> 7
<212> PRT
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 19 25 of the protein
human lactoferrin

<400> 16
Lys Cys Phe Gln Trp Gln Arg
1 5

<210> 17
<211> 7
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 20 26 of the protein human lactoferrin

<400> 17

Cys Phe Gln Trp Gln Arg Asn
1 5

<210> 18

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 21 27 of the protein human lactoferrin

<400> 18

Phe Gln Trp Gln Arg Asn Met
1 5

<210> 19

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 22 28 of the protein human lactoferrin

<400> 19

Gln Trp Gln Arg Asn Met Arg
1 5

<210> 20

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 23 29 of the protein human lactoferrin

<400> 20

Trp Gln Arg Asn Met Arg Lys
1 5

<210> 21
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 24 30 of the protein human lactoferrin

<400> 21
 Gln Arg Asn Met Arg Lys Val
 1 5

<210> 22
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 22
 Arg Asn Met Arg Lys Val Arg
 1 5

<210> 23
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 23 of the protein human lactoferrin

<400> 23
 Glu Ala Thr Lys Cys Phe Gln Trp
 1 5

<210> 24
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 24 of the protein

human lactoferrin

<400> 24

Glu Ala Thr Lys Cys Phe Gln Trp Gln
1 5

<210> 25

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 16 25 of the protein
human lactoferrin

<400> 25

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg
1 5 10

<210> 26

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 16 26 of the protein
human lactoferrin

<400> 26

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn
1 5 10

<210> 27

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of
natural or artificial origin consisting of the
amino acids in positions 16 27 of the protein
human lactoferrin

<400> 27

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met
1 5 10

<210> 28

<211> 13

<212> PRT

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<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 28 of the protein human lactoferrin

<400> 28

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg
1 5 10

<210> 29

<211> 14

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 29 of the protein human lactoferrin

<400> 29

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys
1 5 10

<210> 30

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 30 of the protein human lactoferrin

<400> 30

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val
1 5 10 15

<210> 31

<211> 16

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 16 31 of the protein human lactoferrin

<400> 31

Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 32
 <211> 19
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<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 13 31 of the protein human lactoferrin

<400> 32
 Ser Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg
 1 5 10 15
 Lys Val Arg

<210> 33
 <211> 18
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<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 14 31 of the protein human lactoferrin

<400> 33
 Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys
 1 5 10 15
 Val Arg

<210> 34
 <211> 17
 <212> PRT
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<220>
 <223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 15 31 of the protein human lactoferrin

<400> 34
 Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val
 1 5 10 15
 Arg

<210> 35

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<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 17 31 of the protein human lactoferrin!

<400> 35
Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 36
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 18 31 of the protein human lactoferrin

<400> 36
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 37
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 19 31 of the protein human lactoferrin

<400> 37
Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 38
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 20 31 of the protein human lactoferrin

<400> 38

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Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 39
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 21 31 of the protein human lactoferrin

<400> 39
Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 40
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 22 31 of the protein human lactoferrin

<400> 40
Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 41
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide of natural or artificial origin consisting of the amino acids in positions 23 31 of the protein human lactoferrin

<400> 41
Trp Gln Arg Asn Met Arg Lys Val Arg
1 5

<210> 42
<211> 8
<212> PRT
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide of

1003300-000914
natural or artificial origin consisting of the
amino acids in positions 24 31 of the protein
human lactoferrin

<400> 42
Gln Arg Asn Met Arg Lys Val Arg
1 5

<210> 43
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> PEPTIDE
<222> (2)..(10)
<223> Amino acids 2, 4, 6 and 10 are Xaa wherein Xaa = Gln, Lys,
Asp, Asn or Val.

<220>
<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to a modification
of the sequence consisting of amino acids 21 31 in
human lactoferrin

<400> 43
Phe Xaa Trp Xaa Arg Xaa Met Arg Lys Xaa Arg
1 5 10

<210> 44
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to the sequence
consisting of amino acids 21 31 in human
lactoferrin

<400> 44
Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 45
<211> 11
<212> PRT
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<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to the sequence
consisting of aa 21 31 in human lactoferrin
wherein one aa has been substituted

<400> 45

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Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

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<210> 46
<211> 12
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin

wherein one aa has been substituted
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<400> 46
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

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<210> 47
<211> 12
<212> PRT
<213> Artificial Sequence
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<223> ACETYLATION
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<222> (12)
<223> AMIDATION
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<400> 47
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

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<210> 48
<211> 13
<212> PRT
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<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 19 31 in human lactoferrin wherein one aa has been substituted

<400> 48

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Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 49
<211> 13
<212> PRT
<213> Artificial Sequence

<220>

<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
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<223> AMIDATION

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<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 19 31 in human lactoferrin
wherein one aa has been modified

<400> 49
Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 50
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 18 31 in human lactoferrin
wherein one aa has been substituted

<400> 50
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 51
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<223> ACETYLATION

<220>
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<222> (14)
<223> AMIDATION

<220>
<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to the sequence
consisting of aa 18 31 in human lactoferrin

wherein one aa has been substituted

<400> 51
Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 52
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to a modification
of the sequence consisting of amino acids 18 31 in
human lactoferrin

<400> 52
Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg
1 5 10

<210> 53
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to a modification
of the sequence consisting of amino acids 18 31 in
human lactoferrin

<220>
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<223> ACETYLATION

<220>
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<223> AMIDATION

<400> 53
Thr Lys Ala Phe Lys Trp Gln Arg Glu Met Arg Lys Val Arg
1 5 10

<210> 54
<211> 14

1003300-000914

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of aa 18 31 in human lactoferrin; a lactam is formed between aa 5 and 9

<220>

<221> BINDING

<222> (5)..(9)

<223> LACTAM

<400> 54

Thr Lys Ala Phe Lys Trp Gln Arg Asp Met Arg Lys Val Arg
1 5 10

<210> 55

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of aa 18 31 in human lactoferrin; a lactam is formed between aa 5 and 9

<220>

<221> MOD_RES

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<223> ACETYLTATION

<220>

<221> MOD_RES

<222> (14)

<223> AMIDATION

<220>

<221> BINDING

<222> (5)..(9)

<223> LACTAM

<400> 55

Thr Lys Ala Phe Lys Trp Gln Arg Glu Met Arg Lys Val Arg
1 5 10

<210> 56

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

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<400> 56

Thr Lys Lys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 57

<211> 14

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

<220>

<221> MOD_RES

<222> (1)

<223> ACETYLTATION

<220>

<221> MOD_RES

<222> (14)

<223> AMIDATION

<400> 57

Thr Lys Lys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 58

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

<400> 58

Thr Lys Lys Phe Gln Trp Asp Arg Lys Met Arg Lys Asp Arg
1 5 10

<210> 59

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 18 31 in human lactoferrin

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<220>
<221> MOD_RES
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<223> ACETYLTATION

<220>
<221> MOD_RES
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<223> AMIDATION

<400> 59
Thr Lys Lys Phe Gln Trp Asp Arg Lys Met Arg Lys Asp Arg
1 5 10

<210> 60
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresp. to a modification of the seq. consisting of aa 18 31 in human lactoferrin; lactams formed between aa 3 and 7, and 9 and 13

<220>
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<222> (3)..(7)
<223> LACTAM

<220>
<221> BINDING
<222> (9)..(13)
<223> LACTAM

<400> 60
Thr Lys Lys Phe Gln Trp Asp Arg Lys Met Arg Lys Asp Arg
1 5 10

<210> 61
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresp. to a modification of the seq. consisting of aa 18 31 in human lactoferrin; lactams formed between aa 3 and 7, and 9 and 13

<220>
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<223> ACETYLTATION

<220>
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<223> AMIDATION

<220>

<221> BINDING

<222> (3)..(7)

<223> LACTAM

<220>

<221> BINDING

<222> (9)..(13)

<223> LACTAM

<400> 61

Thr Lys Lys Phe Gln Trp Asp Arg Lys Met Arg Lys Asp Arg
1 5 10

<210> 62

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to the sequence
consisting of amino acids 17 31 in human
lactoferrin

<400> 62

Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 63

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to a modification
of the sequence consisting of amino acids 17 31 in
human lactoferrin

<220>

<221> MOD_RES

<222> (1)

<223> ACETYLATION

<220>

<221> MOD_RES

<222> (15)

<223> AMIDATION

<400> 63

Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

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<210> 64
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to the sequence
consisting of amino acids 16 31 in human
lactoferrin

<400> 64
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 65
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to a modification
of the sequence consisting of amino acids 16 31 in
human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (16)
<223> AMIDATION

<400> 65
Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10 15

<210> 66
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or
artificial origin, corresponding to the sequence
consisting of amino acids 15 31 in human
lactoferrin

<400> 66
Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val
1 5 10 15

Arg

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<210> 67
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: of natural or artificial origin, corresponding to a modification of the sequence consisting of amino acids 15 31 in human lactoferrin

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (17)
<223> AMIDATION

<400> 67
Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val
1 5 10 15

Arg

<210> 68
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 68
Ala Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 69
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 69
Cys Ala Gln Trp Gln Arg Asn Met Arg Lys Val Arg
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10

1

5

<210> 70
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 70
Cys Phe Ala Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 71
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 71
Cys Phe Gln Ala Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 72
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 72
Cys Phe Gln Trp Ala Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 73
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

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artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been modified

<400> 73
Cys Phe Gln Trp Gln Ala Asn Met Arg Lys Val Arg
1 5 10

<210> 74
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 74
Cys Phe Gln Trp Gln Arg Ala Met Arg Lys Val Arg
1 5 10

<210> 75
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 75
Cys Phe Gln Trp Gln Arg Asn Ala Arg Lys Val Arg
1 5 10

<210> 76
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 76
Cys Phe Gln Trp Gln Arg Asn Met Ala Lys Val Arg
1 5 10

<210> 77

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<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 77
Cys Phe Gln Trp Gln Arg Asn Met Arg Ala Val Arg
1 5 10

<210> 78
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 78
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Ala Arg
1 5 10

<210> 79
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 79
Cys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Ala
1 5 10

<210> 80
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein one aa has been substituted

<400> 80

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Cys Phe Gln Leu Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 81
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 81
Cys Phe Gln Trp Gln Lys Asn Met Arg Lys Val Arg
1 5 10

<210> 82
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 82
Cys Phe Gln Trp Gln Arg Asn Leu Arg Lys Val Arg
1 5 10

<210> 83
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 83
Cys Phe Gln Trp Gln Arg Asn Met Lys Lys Val Arg
1 5 10

<210> 84
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

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artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 84
Cys Phe Gln Trp Glu Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 85
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 85
Cys Phe Gln Trp Gln Glu Asn Met Arg Lys Val Arg
1 5 10

<210> 86
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence

consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 86
Cys Phe Gln Trp Gln Arg Glu Met Arg Lys Val Arg
1 5 10

<210> 87
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<220>
<221> MISC_FEATURE
<222> (5)
<223> Amino acid 5 is Xaa wherein Xaa = Orn.

<400> 87

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Cys Phe Gln Trp Xaa Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 88
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<220>
<221> MISC_FEATURE
<222> (5)
<223> Amino acid 5 is Xaa wherein Xaa = Nle.

<400> 88
Cys Phe Gln Trp Xaa Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 89
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<220>
<221> MISC_FEATURE
<222> (7)
<223> Amino acid 7 is Xaa wherein Xaa = Orn.

<400> 89
Cys Phe Gln Trp Gln Arg Xaa Met Arg Lys Val Arg
1 5 10

<210> 90
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<220>

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<221> MISC_FEATURE

<222> (7)

<223> Amino acid 7 is Xaa wherein Xaa = Nle.

<400> 90

Cys Phe Gln Trp Gln Arg Xaa Met Arg Lys Val Arg
1 5 10

<210> 91

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:of natural or
artificial origin, corresponding to the sequence
consisting of aa 20 31 in human lactoferrin
wherein one aa has been substituted

<400> 91

Cys Phe Gln Trp Lys Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 92

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:of natural or
artificial origin, corresp. to a modification of
the sequence consisting of aa 18 31 in human
lactoferrin

<220>

<221> MOD_RES

<222> (1)

<223> ACETYLATION

<220>

<221> MOD_RES

<222> (12)

<223> AMIDATION

<220>

<221> BINDING

<222> (5)..(9)

<400> 92

Cys Phe Gln Trp Lys Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 93

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<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein some aa have been substituted

<400> 93
Cys Phe Gln Trp Lys Arg Ala Met Arg Lys Val Arg
1 5 10

<210> 94
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein some aa have been substituted

<400> 94
Cys Phe Ala Trp Lys Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 95
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein some aa have been substituted

<400> 95
Cys Phe Ala Trp Gln Arg Ala Met Arg Lys Val Arg
1 5 10

<210> 96
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresponding to the sequence consisting of aa 20 31 in human lactoferrin wherein some aa have been substituted

<400> 96
Cys Phe Gln Leu Lys Lys Asn Met Lys Lys Val Arg
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5

<210> 97
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresp. to a modification of the sequence consisting of aa 20 31 in human lactoferrin

<220>
<221> BINDING
<222> (5)..(9)

<400> 97
Cys Phe Ala Leu Lys Lys Ala Met Lys Lys Val Arg
1 5 10

<210> 98
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:of natural or artificial origin, corresp. to a modification of the sequence consisting of aa 18 31 in human lactoferrin

<220>
<221> BINDING
<222> (5)..(9)

<220>
<221> MOD_RES
<222> (1)
<223> ACETYLATION

<220>
<221> MOD_RES
<222> (14)
<223> AMIDATION

<400> 98
Thr Lys Lys Phe Gln Trp Gln Arg Asn Met Arg Lys Val Arg
1 5 10

<210> 99
<211> 12
<212> PRT
<213> Artificial Sequence

<220>

1003300-000914

<223> Description of Artificial Sequence:of natural or artificial origin, corresp. to a modification of the sequence consisting of aa 20 31 in human lactoferrin

<220>

<221> PEPTIDE

<222> (3)

<223> Amino acid 3 is Xaa wherein Xaa = Gln or Ala.

<220>

<221> PEPTIDE

<222> (4)

<223> Amino acid 4 is Xaa wherein Xaa = Trp or Leu.

<220>

<221> PEPTIDE

<222> (5)

<223> Amino acid 5 is Xaa wherein Xaa = Gln, Lys, Orn, Ala or Nle.

<220>

<221> PEPTIDE

<222> (6)

<223> Amino acid 6 is Xaa wherein Xaa = Arg, Lys or Ala.

<220>

<221> PEPTIDE

<222> (7)

<223> Amino acid 7 is Xaa wherein Xaa = Asn, Orn, Ala or Nle.

<220>

<221> PEPTIDE

<222> (8)

<223> Amino acid 8 is Xaa wherein Xaa = Met or Leu.

<220>

<221> PEPTIDE

<222> (9)

<223> Amino acid 9 is Xaa wherein Xaa = Arg or Lys.

<220>

<221> BINDING

<222> (5)..(9)

<400> 99

Cys Phe Xaa Xaa Xaa Xaa Xaa Xaa Xaa Lys Val Arg
1 5 10

<210> 100

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial sequence:a fragment of human lactoferrin consisting of the amino acids in positions 12 40

<400> 100

Val Ser Gln Pro Glu Ala Thr Lys Cys Phe Gln Trp Gln Arg Asn Met
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								1003300-000914	
1		5						10	15
Arg	Lys	Val	Arg	Gly	Pro	Pro	Val	Ser	Cys
		20						25	Ile
									Lys
									Arg

<210> 101
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> of natural or artificial origin, corresponding to
 modification of the sequence consisting of amino
 acids 16 40 in human lactoferrin of SEQ ID NO. 2

<400> 101

Gly	Pro	Pro	Val	Ser	Cys	Ile	Lys	Arg
1				5				

<210> 102
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> of natural or artificial origin, not a
 modification of the sequence consisting of amino
 acids 18 31 in human lactoferrin of SEQ ID NO. 99

<400> 102
 Glu Ala Thr Lys
 1